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| WILLIAM K. BUCHER TEKTRONIX, INC. 14150 S.W. KARL BRAUN DRIVE P.O. BOX 500, MS 50-LAW BEAVERTON, OR 97077 | | | EXAMINER ZHU, JOHN X | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/786,446

Applicant(s)

PICKERD ET AL.

Examiner

John Zhu

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 17-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-12 is/are rejected.
- 7) ☒ Claim(s) 7,8,13-16 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-16, drawn to calibration, classified in class 324, subclass 601.
 - II. Claim 17-25, drawn to scattering type parameters, classified in class 324, subclass 638.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the process can be practiced with another materially different product since it does not require the memory for storing transfer parameters associated with the probe impedance.

3. During a telephone conversation with William Bucher on 9/18/2007 a provisional election was made without traverse to prosecute the invention of group I, claims 1-16. Affirmation of this election must be made by applicant in replying to this Office action. Claims 17-25 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

5. Claims 5 and 12 are objected to because of the following informalities: antecedent basis of "DUT". "DUT" is not previously mentioned. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 2, 3 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 2, it is not clear to what the controller is adapting the stored transfer parameters. More specifically, please indicate adapting to do what.

For the purpose of examination, claim 2 will be read as including a controller in communications with the memory storing transfer parameters.

Similarly, and with respect to claim 3, it is not clear to what the display device is adapting the transfer parameters.

For the purpose of examination, claim 3 will be read as including a display device for displaying waveforms representing a signal received from test probe.

With respect to claim 10, in view of the specification and drawings, it is not clear as to what the communications processor is and its function.

For the purpose of examination, claim 10 will be read as the same controller in claim 2 in communications with the memory.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 2, 9, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (5,621,331).

With respect to claim 1, the apparatus adapted for use with a test probe deals with the same concept as impedance matching between sources and loads. In this case, the probe is read as the load.

Smith discloses a memory used to store S-parameters (column 7, lines 48-49, equivalent to transfer parameters), and adjusting controllable impedance device (stub positions, column 7, line 60) in response to those stored parameters for impedance matching (column 7, lines 45-62).

Although Smith does not explicitly disclose for use with a test probe, it can be reasonably inferred that all test probes have relatively different characteristics. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Smith to include a probe structure for the purpose of impedance matching the probe to the rest of the testing system.

With respect to claims 2 and 10, Smith further discloses a controller (data processor, Fig. 3, 134) that is in communications with the memory (136) storing transfer parameters.

With respect to 9, Smith as modified does not disclose the apparatus is integrated into the test probe. However, making integral is not patentably distinct unless new or unexpected results are produced. See *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Smith to include the integrated apparatus with a test probe for the purpose of simple construction and convenient handling.

With respect to claim 11, Smith further discloses the transfer parameters being scattering parameters (Column 7, lines 48-49).

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith as applied to claim 1 above, and further in view of Gibson et al. (5,530,373).

With respect to claim 3, Smith does not explicitly teach a display device for displaying waveforms representing a signal received from test probe.

Gibson discloses a display (Fig. 1, 10) displaying a waveform from a test probe (Fig. 1).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Smith to include the display as taught by Gibson for the purpose of displaying a test waveform.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith as applied to claim 1 above, and further in view of Garcia (6,973,183 B1).

With respect to claim 4, Smith does not explicitly disclose the controllable impedance device comprises a selectable network of resistive and reactive components.

Garcia discloses an impedance matching block that comprises a combination of resistive and reactive elements (Column 4, lines 34-38).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Smith to include the resistive and reactive elements as taught by Garcia for the purpose of facilitating complex impedance matching (lines 37-38).

12. Claim 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith as applied to claim 1 above, and further in view of Kreager et al. (6,863,564 B2).

With respect to claims 5 and 6, Smith discloses all aspects of the claim except for a test fixture adapted to connect the signal from the DUT to a tip of the test probe, or a test fixture probe tip.

Kreager discloses a test fixture (Fig. 1, element 4) adapted to connect the signal (in 5) from the DUT 2 to a tip of the test probe 6, and a test fixture probe tip (adapter signal pin 12) which connects with DUT.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Smith to include the test fixture and tip as taught by Kreager for the purpose of maintaining a consistent contact/impedance and minimize reflections during measurements (Abstract, lines 1-5).

13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith as applied to claim 1 above, and further in view of Renken et al. (6,847,213 B2).

With respect to claim 12, Smith does not explicitly disclose the memory storing transfer parameters associated with the DUT.

Renken discloses it is common to store in memory the transfer parameters of the DUT (mated connector pairs and the patch cord, abstract, lines 6-8).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Smith to include the storing of the DUT transfer parameters in memory as taught by Renken for the purpose of characterizing the DUT during measurements.

Allowable Subject Matter

14. Claims 7, 8 and 13-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter: claim 7 is allowable as the prior art does not teach or render obvious the entire combination including specifically the test fixture probe tip comprising any one of a plurality of tips and each of the tips having associated with it a transfer parameter stored in memory.

Claim 8 is allowable as it depends on claim 7.

Claim 13 is allowable as the prior art does not teach or render obvious the entire combination including specifically additional transfer parameters in memory adapted to characterize a circuit disposed between a test point accessible to probe and a non-accessible test point.

Claim 14 is allowable as the prior art does not teach or render obvious the entire combination including specifically user provided transfer parameters in memory adapted to modify an impedance characterization of at least of a probe, DUT and circuitry disposed between probe and DUT.

Claim 15 is allowable as the prior art does not teach or render obvious the entire combination including specifically the apparatus selectively adapts effective input impedance of the probe to provide a compensated and non-compensated result.

Claim 16 is allowable as it depends on claim 15.

Conclusion

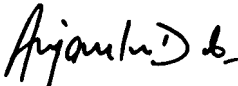
16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Adamian (5,578,932) discloses a calibration technique using different matching standards. Anderson (US PG Pub no 2004/0201383 A1) discloses a calibration technique involving connecting a test fixture to a DUT.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Zhu whose telephone number is (571) 272-5920. The examiner can normally be reached on M-F, 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JZ


ANJAN DEB
PRIMARY EXAMINER

John Zhu
Examiner
Art Unit 2858

